CLAIMS

What is claimed is:

1.   A method comprising:

          determining energies in selected portions of far and near end signals;

          selectively processing the selected portion of the near end signal using foreground
adaptive coefficient filtering based on the selected portions of the far and near end
signals;

          selectively processing the selected portion of the near end signal using fixed
coefficient filtering in response based on the selected portions of the far and near end
signals; and

          selectively transferring the selected portion of the near end signal without
processing using foreground adaptive coefficient filtering and without processing using
fixed coefficient filtering in response to a ratio of the selected portion of the far end
energy signal over the selected portion of the near end signal energy not being sufficient.

2.   The method of Claim 1, wherein the selectively processing the selected portion of
the near end signal using foreground adaptive coefficient filtering is based on a first condition
and wherein the first condition comprises (i) energy in the selected portion of the far end signal
equaling or exceeding a first threshold and (ii) energy in the selected portion of the near end
signal equaling or exceeding a second threshold and (iii) a ratio of the selected portion of the far
end energy signal over the selected portion of the near end signal energy being sufficient.

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3.   The method of Claim 2, wherein the selectively processing the selected portion of

the near end signal using fixed coefficient filtering is based on a second condition and wherein

the second condition comprises the first condition not being met.

4.   The method of Claim 1, further comprising:

        selectively replacing the selected portion of the near end signal with comfort noise

based in part on energy in the selected portion of near end signal and energy in the

selected portion of near end signal after the transferring or prior applied processing.

5.   The method of Claim 1, further comprising:

        selectively applying background adaptive coefficient filtering of the selected

portion of the near end signal based in part on energy in the selected portion of near

end signal and energy in the selected portion of near end signal after the transferring

or prior applied processing; and

        selectively storing coefficients of the background adaptive filtering into a shared

memory based in part on energy of the selected portion of the near end signal and

energy in the selected portion of the near end signal after background adaptive

filtering.

6.   The method of Claim 5, further comprising:

        selectively replacing the selected portion of the near end signal with comfort noise

based in part on energy in the selected portion of the near end signal and energy in

the selected portion of the near end signal after the transferring or prior applied

processing.

7.   The method of Claim 1, further comprising incrementing a current subblock

counter.

8.   The method of Claim 1, wherein the selected portion comprises multiple samples.

9.   The method of Claim 1, wherein the selectively processing the selected portion of

the near end signal using foreground adaptive coefficient filtering includes processing every

other subframe of the near end signal.

10.   The method of Claim 1, wherein the selectively applying background adaptive

coefficient filtering of the selected portion of the near end signal includes processing every other

subframe of the near end signal.

11.   An apparatus comprising:

          an adaptive filter to selectively process a selected portion of a near end signal

based on selected portions of the far and near end signals;

          a fixed filter to selectively process the selected portion of the near end signal

based on selected portions of the far and near end signals;

a controller to control processing of the selected portion of the near end signal;

a coefficient memory to store coefficients used by the fixed filter and the adaptive filter; and

a comfort noise generator to selectively replace the selected portion of the near end signal with comfort noise.

12. The apparatus of Claim 11, wherein the adaptive filter comprises:

a background filter to selectively apply adaptive coefficient filtering of the selected portion of the near end signal;

a foreground filter to selectively apply fixed coefficient filtering of the selected portion of the near end signal and to provide the fixed coefficient filtered selected portion of the near end signal from the adaptive filter; and

a second coefficient memory to store coefficients used by the background filter and to selectively provide the coefficients for storage into the coefficient memory.

13. The apparatus of Claim 12, wherein the background filter comprises an adaptive coefficient finite impulse response filter.

14. The apparatus of Claim 12, wherein the background filter utilizes a recursive normalized least mean square algorithm to update coefficients based on processing of the near end signal.

15.   The apparatus of Claim 12, wherein the foreground filter comprises a fixed coefficient finite impulse response filter.

16.   The apparatus of Claim 11, wherein the fixed filter comprises a fixed coefficient finite impulse response filter.

17.   The apparatus of Claim 11, wherein the comfort noise generator is to selectively replace the selected portion of the near end signal with comfort noise based in part on energy in the selected portion of the near end signal after the transferring or prior applied processing.

18.   The apparatus of Claim 11, wherein the comfort noise generator is to selectively transfer the transferred or processed selected portion of the near end signal based in part on energy in the selected portion of near end signal after the transferring or prior applied processing.

19.   The apparatus of Claim 11, wherein the portion comprises multiple samples.

20.   The apparatus of Claim 11, wherein the adaptive filter is to process every other subframe of the selected portion of the near end signal.

21.   A system comprising:

a speaker;

a microphone;

a signal processor comprising:

an adaptive filter to selectively process a selected portion of a near
end signal based in part on energy in the near end signal and a far end
signal,

a fixed filter to selectively process the selected portion of the near
end signal based in part on energy in the near end signal and the far end
signal,

a controller to control processing of the selected portion of the near
end signal,

a coefficient memory to store coefficients used by the fixed filter
and the adaptive filter, and

a comfort noise generator to selectively replace the selected
portion of the near end signal with comfort noise; and

an output device to provide the processed or transferred near end signal to the
speaker.

22. The system of Claim 21, wherein the adaptive filter comprises:

a background filter to selectively apply adaptive coefficient filtering of the selected portion of the near end signal;

a foreground filter to selectively apply fixed coefficient filtering of the selected portion of the near end signal and to provide the fixed coefficient filtered selected portion of the near end signal from the adaptive filter; and

a second coefficient memory to store coefficients used by the background filter and to selectively provide the coefficients for storage into the coefficient memory.